

REMARKS

Claims 1, 4, 5 and 9-10 remain pending after amendment.

Amendment to Title

The Title is amended in a manner consistent with the suggestion of the Examiner.

Claim Amendments

By this amendment, claim 1 is amended to state that the front and rear portions have a high stiffness region, but do not have a low stiffness region, and wherein the low stiffness region is present only in the crotch portion. Support for this amendment resides at Figure 6(c) and page 20 of the specification. New claim 10 is added, support for which resides at page 9, last line to page 10, line 3 of the specification. No new matter is added by this amendment.

Withdrawn Rejection

Applicants note with thanks the withdrawal of the previous rejection over Okuda et al '140.

Applicants' Invention

Applicants' invention is directed to a disposable diaper of a flat type. The claimed diaper is particularly easy to apply to a wearer who is in a standing position.

A significant aspect of the claimed invention is that the standing gathers on each side are fixed at an extension ratio of 100% or higher, and the tensile characteristics of the standing gathers on each side measured in their state not fixed to the diaper are such that the tensile load required to extend to an effective extension ratio is 20 to 120 cN and that the increase rate of tensile load required for extending from an extension ratio of 20% up to the effective extension ratio is 1.0 cN/% or lower, the effective extension ratio being 30% lower than the fixing extension ratio.

Since the present invention satisfies the above limitation, especially taken together with the limitation of the bending stiffness of the absorbent member due to the presence of laterally separated low stiffness regions having a bending stiffness of 25 cN/50mm or lower, and a centrally disposed high stiffness region, it is remarkably easy to put the disposable diaper on a wearer in a standing posture.

The region of the crotch portion further has a high stiffness region R2 disposed between *and separate and distinct from* laterally separated low stiffness regions and having a bending stiffness of higher than 25 cN/50 mm in the diaper width direction, and wherein the low stiffness regions R1 are oblong regions provided along each lateral side edge of the absorbent member in the region of the crotch portion and adjacent the region of higher stiffness. *The front and rear portions of the diaper include a high stiffness region, and no low stiffness region, with the low stiffness region being only in the crotch portion of the diaper.*

The claimed invention is neither disclosed nor suggested by the cited prior art.

Rejection under 35 USC 103(a)

Claims 1, 4-5 and 9 stand rejected under 35 USC 103(a) as being unpatentable over Gravdahl '441 (newly-cited) in view of Buell '092. This rejection is respectfully traversed to the extent deemed to apply to the claims as amended.

In support of the rejection, the Examiner takes the position that Gravdahl discloses an absorbent core 10 for use with diapers, etc. which absorbent core has a mass density which is greater in the center than in laterally-opposed regions for liquid absorption. The Examiner further takes the position that "since the density is greatest in the center region, the center region also has a higher bending stiffness and variation in basis weight than in the outer lateral regions since it is well known that an increase in density means there is more material and thus the area has a higher resistance to bending upon application of force." The addition of "leg elastics and waistbands to absorbent diaper wearing articles" is stated by the Examiner to be "well known" as taught by Buell.

In response, applicants note that the Gravdahl reference is directed to an absorbent core article that may be used with a variety of absorbent articles such as diapers. The absorbent core is comprised of a fibrous material having a mass density that *varies gradually from a centermost portion of highest density to outermost portions of lower density*. As noted above, it is the Examiner's view that this difference in mass density meets the claimed limitation of having a centrally-positioned area of high stiffness positioned between adjacent areas of low stiffness.

In response, claim 1 is amended to clarify that the high and low stiffness regions are separate and distinct from one another. Such a limitation distinguishes over the gradually-changing density gradient embodiment of the reference.

It is also noted that the cross-sectional view of the absorbent member of Figures 2 and 3 of Gravdahl indicates that the absorbent member has the same structure along the longitudinal extent of the absorbent member.

In an attempt to further distinguish over the reference, claim 1 is amended to provide only for a low stiffness region in the crotch area, with the respective front and rear portions of the diaper including only areas of high stiffness. The Examiner's attention is directed to applicants' Figure 6 (c) in this regard.

The cited Buell et al reference does not cure the deficiencies of Gravdahl, in particular because the reference is relied upon merely to teach the addition of leg elastics and waistbands. The reference is otherwise silent with respect to the above-noted limitations which distinguish over the Gravdahl reference.

In view of the above, the rejection is without basis and should be withdrawn.

New Claim 10


New claim 10 is presented which distinguishes over the cited prior art for the reason that it is directed to the presence of a low stiffness region formed by use of only one of two absorbent layers that are present in the absorbent member of the diaper. Such an embodiment is neither disclosed nor suggested by the cited prior art.

The application is in condition for allowance, and an early indication of same is earnestly solicited.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.


Dated:

Respectfully submitted,

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